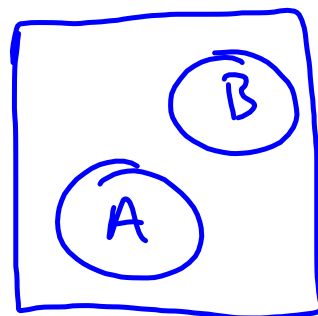


More Formal Probability:

4. Addition Rule:

For two disjoint events

A and B, the probability that one or the other occurs is the sum of probabilities.



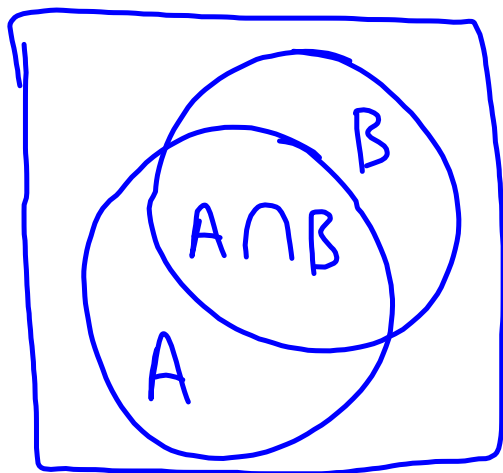
Disjoint \rightarrow they do NOT overlap
(another term for "disjoint" is "mutually exclusive")

$$P(A \text{ or } B) = P(A \cup B) = P(A) + P(B)$$

provided A and B are disjoint

\cup \rightarrow means "union"

5. Multiplication Rule:



\cap \rightarrow means
"intersection"

For two independent events A and B, the probability that both A and B occur is the product of the probabilities of the two events.

$$P(A \text{ and } B) = P(A \cap B) = P(A) \cdot P(B)$$

provided A and B are independent